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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,771	04/12/2006	Cornelis Johannes Adrianus Schetterts	NL03 1227 US	3541
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NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER BEHM, HARRY RAYMOND	
			ART UNIT 2838	PAPER NUMBER
			NOTIFICATION DATE 11/21/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

**Office Action Summary****Application No.**

10/575,771

**Applicant(s)**SCHETTERS, CORNELIS  
JOHANNES ADRIANUS**Examiner**

HARRY BEHM

**Art Unit**

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

The finality of the last Office action, sent 9/5/08, is withdrawn due to the new grounds of rejection below.

The period for reply has been reset and a new shortened statutory period shall take effect from the mailing date of this action.

***Response to Arguments***

Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

A title such as the following is suggested: A power converter with a half wave rectifier and filter.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kayser (US 6,295,212) in view of the TNY25x Datasheet by Power Integrations.

With respect to Claim 1, Kayser discloses a power converter, comprising: an input circuit having a rectifier that is a single diode rectifier (Fig. 2 D1) and a filter (Fig. 2 C1) connected in series with the rectifier, the filter providing a DC voltage output; and a switched mode power supply IC (Fig. 2 20) arranged to receive the DC voltage output from the filter. Kayser does not disclose in Figure 2 wherein the filter comprises a non-electrolytic capacitor. The 25x Datasheet teaches a filter (Fig. 9 C1) that includes a non-electrolytic capacitor (Fig. 9 C1) connected in series with a rectifier. It would have been obvious to one of ordinary skill in the art at the time of the invention to implement a non-electrolytic capacitor in series with the single diode rectifier. The reason for doing so was to decouple the controller as use of a decoupling capacitor was well known in the art and to filter "the high voltage DC supply, and is necessary only if there is a long trace length from the source of the DC supply" (TNY 25x datasheet page 5, last paragraph of first column).

With respect to Claim 2, Kayser in view of the TNY25x Datasheet disclose a power converter as claimed in claim 1, wherein the non-electrolytic capacitor (Fig. 9 C1) has a capacitance of about 10 nF. Kayser in view of the TNY25x Datasheet does not disclose the capacitance of capacitor C1 in Figure 9 is 100nF. However, the TNY25x Datasheet discloses the capacitance of decoupling capacitor C3 as 100nF. It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the capacitance of capacitor C1 as about 100nF. The reason for doing so was the capacitance of 100nF was a commonly used decoupling capacitance value as disclosed by the TNY25x datasheet and one of ordinary skill in the art would have been able to size a decoupling capacitor.

#### See MPEP 2144.05 II. OPTIMIZATION OF RANGES

##### A. Optimization Within Prior Art Conditions or Through Routine Experimentation

Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); see also *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of

scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.). For more recent cases applying this principle, see Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997).

With respect to Claim 3, Kayser in view of the TNY25x Datasheet disclose a power converter as claimed in claim 1, and Kayser further discloses an inrush resistor (Fig. 2 R1). The TNY25x Datasheet does not disclose additional filtering in Figure 9, but teaches a  $\pi$  filter (Fig. 11 C1,C2,L1 and R1) in Figure 11, wherein the filter further includes an inrush resistor (Fig. 11 R1 limits inrush current at the start of current flow), a coil (Fig. 11 L1), and an electrolytic capacitor (Fig. 1 C1 or C2). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement a  $\pi$  filter. The reason for doing so was "to meet world wide conducted EMI standards", (TNY25x Datasheet page 7 second column).

With respect to Claim 4, Kayser in view of the TNY25x Datasheet disclose a power converter as claimed in claim 3, wherein the electrolytic capacitor (Fig. 11 C1) has a capacitance of 6.8  $\mu$ F, which is about 10  $\mu$ F.

With respect to Claim 5, Kayser in view of the TNY25x Datasheet disclose a power converter as claimed in claim 3, wherein the coil (Fig. 11 L1) and the non-electrolytic capacitor (Fig. 11 C1 or C2) are arranged to filter distortions caused by the switched mode power supply IC.

With respect to Claim 6, Kayser in view of the TNY25x Datasheet disclose a power converter comprising as set forth above wherein an input circuit having a rectifier that is a single diode rectifier (Kayser Fig. 2 D1) and a filter that includes an inrush resistor (TNY25x datasheet Fig. 11 R1), a coil (Fig. 11 L1), an electrolytic capacitor (Fig. 11 C1), and a non-electrolytic capacitor (Fig. 9 C1) connected in series with the rectifier, the filter providing a DC voltage output at a circuit node (Fig. 11 node R1-C1) connecting the inrush resistor and one electrode of the electrolytic capacitor, and wherein the coil and the inrush resistor are connected in parallel between the non-electrolytic capacitor (Fig. 9 C1) and the electrolytic capacitor (Fig. 11 C1), and a switched mode power supply IC (Kayser Fig. 2 20) arranged to receive the DC voltage output from the filter.

With respect to Claim 7, Kayser in view of the TNY25x Datasheet disclose a power converter as set forth above, wherein the DC voltage output of the filter is applied to a series connection of a primary winding (Fig. 2 Lp) and the switched mode power supply IC (Fig. 2 20). Kayser does not disclose a current sensing resistor in Figure 2, however, Kayser discloses a current sensing resistor (Fig. 1 R1) in Figure 1. It would have been obvious to one of ordinary skill in the art at the time of the invention to implement a current sensing resistor. The reason for doing so was to sense the primary current to control and limit the primary current as was well known in the art and taught by Kayser ("Ipk produces a voltage across the resistor R2 which causes the control circuit to turn off the FET Q6", Kayser column 2, lines 49-51).

With respect to Claim 12, Kayser in view of the TNY25x Datasheet disclose a power converter as set forth above. See claim 6 for additional details.

Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kayser (US 6,295,212) in view of the TNY25x Datasheet by Power Integrations and further in view of the TEA152x family data sheet by Philips.

With respect to Claim 8, Kayser in view of the TNY25x Datasheet and the TEA152x Datasheet disclose a power converter as set forth above and do not disclose the gain of the feedback loop. It would have been obvious to one of ordinary skill in the art at the time of the invention to power the Philips IC TEA1520P with the half wave rectifier and pi filter. The reason for doing so is the TEA1520P "is a Switched Mode



Power Supply (SMPS) controller IC that operates directly from the rectified universal mains. It is implemented in the high voltage EZ-HV SOI process, combined with a low voltage BICMOS process. The device includes a high voltage power switch and a circuit for start-up directly from the rectified mains voltage" (TEA 152x family data sheet page 2).

With respect to Claim 9, Kayser in view of the TNY25x Datasheet and the TEA152x Datasheet disclose a power converter as set forth above wherein the high gain feedback loop includes a multiplier arranged to diminish ripple caused by the non-electrolytic capacitor.

With respect to Claim 10, Kayser in view of the TNY25x Datasheet and the TEA152x Datasheet disclose a power converter as set forth above wherein the multiplier is a factor 10 multiplier.

With respect to Claim 11, Kayser in view of the TNY25x Datasheet and the TEA152x Datasheet sheet disclose a power converter as set forth above, wherein the switched mode power supply IC (Fig. 2 20) includes an internal start-up circuit having a high-voltage start-up current source and without provision of any dissipative bleeder resistor [inrush resistor external to IC].

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HARRY BEHM whose telephone number is (571)272-8929. The examiner can normally be reached on 7:00 am - 3:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm E. Ullah can be reached on (571) 272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Akm Enayet Ullah/  
Supervisory Patent Examiner, Art  
Unit 2838

/Harry Behm/  
Examiner, Art Unit 2838